MEDI-CAL STUDIES IN AIDS

EXPENDITURES FOR PERSONS WITH AIDS: 1980 - 1994

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EXECUTIVE SUMMARY

This report describes expenditures, demographic and risk factor data for 37,269 persons with Acquired Immunodeficiency Syndrome (AIDS) known to be on Medi-Cal, California's Medicaid program, through February 1995. By matching cases on the California AIDS Registry with Medi-Cal payment files and Vital Statistics files, we created a Medi-Cal AIDS Special Research File.

AIDS in the Medi-Cal population continues to shift from white males to injection drug users (IDUs) and racial/ethnic minorities. Before 1985, men reporting sex with men (MSM) and MSM who were also IDUs represented nearly all of the diagnosed cases of AIDS. By Calendar Year 1994, those groups dropped to only 64 percent of newly diagnosed cases, while heterosexual IDUs had risen to 21 percent.

Medi-Cal payments for treatment of person with AIDS have risen steadily in the past decade, both in actual figures and as a percent of total Medi-Cal expenditures. By Fiscal Year 1994-95, the Medi-Cal fee-for-service program paid over $183 million for AIDS-related medical care, representing 1.7 percent of all Medi-Cal fee-for-service expenditures.

By Fiscal Year 1993-94 expenditures per person, per month (EPPPM) averaged $1,575. Prescription medications accounted for nearly 25 percent of this expense, averaging $390 per person, per month. The EPPPM has dipped slightly from previous years, most likely due to the change in definition of "AIDS" in 1993 which now includes persons at an earlier, healthier stage of the disease. Although recent data show the EPPPM to have leveled off, persons with AIDS are living longer, creating a larger beneficiary population. Therefore, Medi-Cal costs are expected to continue climbing.

The bulk of treatment expenses can be attributed to inpatient hospital costs and pharmacy. Although hospital inpatient expenses still represent the greatest proportion of treatment cost, the trend toward home and community-based care has continued. Hospital inpatient once represented over 80 percent of all AIDS treatment expenditures, by Fiscal Year 1993-94 it had dropped to only 42 percent. Conversely, pharmacy once made up only four percent of AIDS expenditures and by 1993-94 had risen to 30 percent.

Pharmacy is expected to become an even greater component of AIDS services with the advent of new drugs. A new class of drug, protease inhibitors, have very recently been approved by the Federal Government. These drugs were not available at the time this Medi-Cal AIDS Special Research file was created, but preliminary results have been exciting. Table 13 was created from the most recent Medi-Cal drug claims. Although these claims have not been matched against the AIDS Registry, the drugs displayed are used only in treatment of AIDS.

To address the need for up-to-the-minute information on utilization of these new medicines, the Medical Care Statistics Section has developed a quarterly report, Medi-Cal Expenditures for Selected Drugs Commonly Used in the Treatment of AIDS. Requests for this report should be directed to Department of Health Services, Medical Care Statistics Section, 714 P Street, Room 1750, P.O. Box 942732, Sacramento, California 94234-7320.

I. INTRODUCTION

This sixth report of acquired immunodeficiency syndrome (AIDS) among persons whose health care is paid by Medi-Cal describes the demographic characteristics of beneficiaries and analyzes the pattern of treatment expenditures. [1]

By February 1995, 37,269 persons with AIDS on Medi-Cal (hereafter PWAMs) had been identified out of 80,148 total persons with AIDS in the State's AIDS Registry. The epidemic, once largely confined to the white, male population of men having sex with men, is shifting to persons using injection drugs, particularly in the racial/ethnic minority groups.

Other data are presented to compare various components of treatment costs with special attention to the rising costs of prescription medicines. Inpatient hospital expenses and average lengths of stay are computed at statewide and county levels. Finally, treatment costs by disease stage are presented for the cohort of persons provided Medi-Cal funded services during 1994.

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[1] Rains, J.; W.T. Maxfield; C.H. Do. Expenditures for Persons with AIDS - 1980-1992. California Department of Health Services, Sacramento, 1994.

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Kizer, K.W.; J. Keith; G. Hiehle; C. Wolcott; W.T. Maxfield. AIDS in California: Expenditures, Demographics and Mortality for Persons with AIDS on Medi-Cal. California Department of Health Services, Sacramento, 1988.

Kizer, K.W.; J. R. Rodriguez; G. McHolland. An Updated Quantitative Analysis of AIDS in California. California Department of Health Services, Sacramento, 1987.

Kizer, K.W.; J. R. Rodriguez; G. McHolland; W. Weller. A Quantitative Analysis of AIDS in California. California Department of Health Services, Sacramento, 1986.

II. METHODOLOGY

The Case Matching Process

Information about the cost of health care for persons with AIDS who are Medi-Cal beneficiaries is not maintained in any one central file in California. Therefore, this analysis has required a review of several data sources. These included: 1) Medi-Cal paid claims and Medi-Cal eligibility files, 2) the State AIDS Registry, and 3) the Vital Statistics Death file.

Initially, the updated version of the AIDS Registry was matched with the previous version of the Medi-Cal AIDS Special Research File. Of the 80,148 records in the AIDS Registry as of February 1995, 24,460 were selected during this early phase of the match process. The remaining 55,688 records then underwent numerous tests to select the most possible matches.

To select the Medi-Cal cases which were likely to match with the AIDS Registry, Medi-Cal paid claims with a primary diagnosis code of AIDS or selected drug codes, (AZT, ddC, or ddI), were merged into a file to match against the residual 55,688 records. A weighting system was used in which AIDS associated diagnosis codes and drug codes were used to evaluate the likelihood of a case being a person with AIDS. The match key was comprised of: birth date, gender, first and last names, SOUNDEX code for last name, and/or social security number if available. The SOUNDEX code was utilized because for many persons with AIDS, the Registry had only a SOUNDEX code rather than the name.

The series of matches resulted in a file of 37,269 Medi-Cal persons with AIDS out of the 80,148 persons with AIDS reported to the Registry as of February 1995. The percentage of matching cases was 46.5 percent. Although this match resulted in about the same level of success as the previous match done for our 1994 study, the residual is becoming quite large in actual numbers. A great number of cases are missing information in key fields, and without extensive manual review it cannot accurately be determined if these persons also receive Medi-Cal benefits. It is likely many of the cases with missing data are actually Medi-Cal beneficiaries.

The matched cases were distributed in the following way:

* 24,220 cases were found by matching the SOUNDEX code, gender, birth date, and 1993 Medi-Cal/AIDS Special Research File.

* 10,177 cases were found by matching the name, gender, birth date, and social security number in various combinations.

* 1,710 cases were found by matching name, gender, and birth date.

* 1,063 cases were found by matching the social security number.

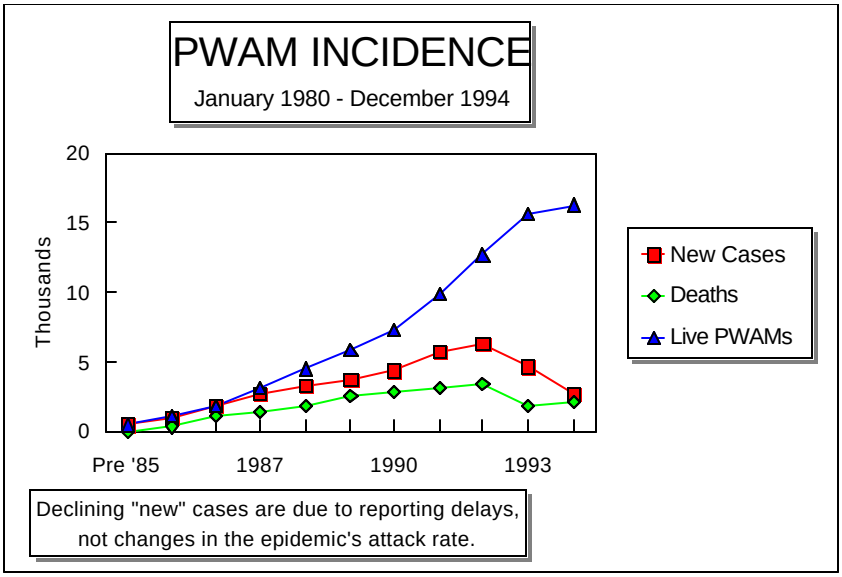
*	99	cases were found by matching the SOUNDEX code, gender, name, and partial birth date.

III. MEDI-CAL PERSONS WITH AIDS

Medi-Cal AIDS Special Research File

From the beginning of the AIDS epidemic in California through February 1995, 37,269 PWAMs have been identified. **Figure 1** shows the growth in new cases, the number of PWAMs who have died between 1980 and 1995, and the number of living PWAMs for these periods.

FIGURE 1



Source: **Table 1.**

TABLE 1
INCIDENCE OF NEW CASES AND DEATHS AMONG
PERSONS WITH AIDS ON MEDI-CAL

CALENDAR YEAR	NEW AIDS CASES	DEATHS	CUMULATIVE NEW CASES	CUMULATIVE DEATHS	LIVE PWAMs
Before 1985	455	12	455	12	443
1985	1,024	362	1,479	374	1,105
1986	1,880	1,098	3,359	1,472	1,887
1987	2,710	1,458	6,069	2,930	3,139
1988	3,328	1,910	9,397	4,840	4,557
1989	3,849	2,581	13,246	7,421	5,825
1990	4,379	2,855	17,625	10,276	7,349
1991	5,771	3,247	23,396	13,523	9,873
1992	6,356	3,541	29,752	17,064	12,688
1993	4,752	1,781	34,504	18,845	15,659
1994*	2,745	2,119	37,249	20,964	16,285

*Data for 1994 are incomplete due to reporting delay.
Source: Medi-Cal AIDS Special Research File.

Characteristics of Persons with AIDS on Medi-Cal

AIDS in the Medi-Cal population continues to shift from white males to injection drug users(IDUs) and racial/ethnic minorities. Before 1985, men reporting sex with men (MSM) and MSM who were also IDUs

represented nearly all of the diagnosed cases of AIDS. By Calendar Year 1994, those groups dropped to only 64 percent of newly diagnosed cases, while heterosexual IDUs had risen to 21 percent.

Of the Medi-Cal AIDS cases reviewed to date, 91.7 percent have been males, 62.6 percent of whom are white. However, when looking at PWAMs diagnosed in Calendar Year 1994, the percent male drops to 85.6 percent.

Blacks continue to be over represented among Medi-Cal AIDS patients, with 18.5 percent of the cases. Hispanics now represent 18.9 percent of the cases, while Asians remain under represented at 1.5 percent of Medi-Cal AIDS patients.

TABLE 2
GENDER/ETHNICITY OF PWAMs

ETHNICITY	ALL CASES		MALE		FEMALE	
	Number	Percent	Number	Percent	Number	Percent
WHITE	22,512	60.40	21,401	62.61	1,111	35.95
BLACK	6,887	18.48	5,713	16.71	1,174	37.99
HISPANIC	7,060	18.94	6,348	18.57	712	23.04
ASIAN	559	1.50	498	1.46	61	1.97
AMERICAN INDIAN	179	0.48	152	0.44	27	0.87
OTHER	72	0.19	67	0.20	5	0.16
TOTAL	37,269	100.00	34,179	100.00	3,090	100.00

Source: Medi-Cal AIDS Special Research File.
Note : Percents are rounded independently and may not add to total.

Temporal Trends in Ethnicity and Gender of Newly Diagnosed AIDS Cases

Tables 3 and 4 provide a detailed view of the trends in ethnicity and gender of newly diagnosed AIDS cases. For men and women combined, racial/ethnic minorities have grown from only 18 percent of newly diagnosed cases to nearly 52 percent.

Table 4 focuses on women. By 1986, when there were enough new cases to show meaningful percentages, the lack of predominance by any one ethnic group became evident. White and black women each represented a little over one-third of new cases, while Hispanic women made up about 21 to 24 percent of new cases. However, this now appears to be changing. Since 1993, the percent of black female PWAMs has been on the rise, while the percent of white female PWAMs has been declining. During 1994, 46.7 percent of newly diagnosed female PWAMs were black, while only 27.9 percent were white.

TABLE 3

TEMPORAL TRENDS IN ETHNIC COMPOSITION OF PWAMs
NEWLY DIAGNOSED CASES BY CALENDAR YEAR

YEAR OF DIAGNOSIS	TOTAL		WHITE		BLACK		HISPANIC		ASIAN		AMERICAN INDIAN		OTHER OR UNKNOWN	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Pre 1985	455	100.00	374	82.20	43	9.45	35	7.69	2	0.44	0	0.00	1	0.22
1985	1,024	100.00	787	76.86	103	10.06	123	12.01	8	0.78	3	0.29	0	0.00
1986	1,880	100.00	1,359	72.29	233	12.39	253	13.46	25	1.33	8	0.43	2	0.11
1987	2,710	100.00	1,906	70.33	373	13.76	385	14.21	29	1.07	7	0.26	10	0.37
1988	3,328	100.00	2,225	66.86	528	15.87	533	16.02	33	0.99	7	0.21	2	0.06
1989	3,849	100.00	2,449	63.63	623	16.19	684	17.77	66	1.71	20	0.52	7	0.18
1990	4,379	100.00	2,620	59.83	810	18.50	853	19.48	67	1.53	20	0.46	9	0.21
1991	5,771	100.00	3,357	58.17	1,081	18.73	1,197	20.74	92	1.59	28	0.49	16	0.28
1992	6,356	100.00	3,603	56.69	1,308	20.58	1,295	20.37	97	1.53	38	0.60	15	0.24
1993	4,752	100.00	2,501	52.63	1,082	22.77	1,046	22.01	86	1.81	31	0.65	6	0.13
1994	2,745	100.00	1,315	47.91	700	25.50	655	23.86	54	1.97	17	0.62	4	0.15
Total	37,249	100.00	22,496	60.39	6,884	18.48	7,059	18.95	559	1.50	179	0.48	72	0.19

urce: Medi-Cal AIDS Special Research File.
ote : Percents are rounded independently and may not add to total.

TABLE 4

TEMPORAL TRENDS IN ETHNIC COMPOSITION OF FEMALE PWAMs
NEWLY DIAGNOSED CASES BY CALENDAR YEAR

YEAR OF DIAGNOSIS	TOTAL		WHITE		BLACK		HISPANIC		ASIAN		AMERICAN INDIAN		OTHER OR UNKNOWN	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Pre 1985	8	100.00	4	50.00	3	37.50	1	12.50	0	0.00	0	0.00	0	0.00
1985	28	100.00	15	53.57	6	21.43	5	17.86	1	3.57	1	3.57	0	0.00
1986	71	100.00	26	36.62	25	35.21	16	22.54	4	5.63	0	0.00	0	0.00
1987	125	100.00	50	40.00	41	32.80	29	23.20	4	3.20	1	0.80	0	0.00
1988	179	100.00	75	41.90	62	34.64	38	21.23	2	1.12	2	1.12	0	0.00
1989	242	100.00	95	39.26	79	32.64	59	24.38	7	2.89	1	0.41	1	0.41
1990	351	100.00	125	35.61	135	38.46	82	23.36	6	1.71	2	0.57	1	0.28
1991	461	100.00	162	35.14	172	37.31	110	23.86	12	2.60	5	1.08	0	0.00
1992	651	100.00	242	37.17	237	36.41	153	23.50	11	1.69	7	1.08	1	0.15
1993	577	100.00	204	35.36	230	39.86	128	22.18	8	1.39	5	0.87	2	0.35
1994	394	100.00	110	27.92	184	46.70	91	23.10	6	1.52	3	0.76	0	0.00
Total	3,087	100.00	1,108	35.89	1,174	38.03	712	23.06	61	1.98	27	0.87	5	0.16

Source: Medi-Cal AIDS Special Research File.
Note : Percents are rounded independently and may not add to total.

Method of Transmission (Or Risk Group) by Ethnicity

As you can see in **Table 5**, the method of transmission (or risk group) varies significantly by ethnicity. For example, white PWAMs are overwhelmingly MSM (73. 0 percent), while black PWAMs have only 44.6 percent in the MSM group. For blacks, heterosexual IDUs made up 29.5 percent of the risk groups while the proportion of all PWAMs from this risk group is only 12.9 percent.

TABLE 5

PWAMs BY RISK GROUP AND RACE/ETHNICITY

RISK GROUP	TOTAL		WHITE		BLACK		HISPANIC		ASIAN		AMERICAN INDIAN		OTHER OR UNKNOWN	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
MEN REPORTING SEX WITH MEN (MSM)	24,460	65.6	16,432	73.0	3,070	44.6	4,416	62.6	403	72.1	93	52.0	46	63.9
HETEROSEXUAL/ INJECTION DRUG USER (IDU)	4,795	12.9	1,876	8.3	2,033	29.5	823	11.7	21	3.8	32	17.9	10	13.9
MSM AND ALSO IDU	4,303	11.5	2,921	13.0	752	10.9	566	8.0	25	4.5	34	19.0	5	6.9
HEMOPHILIAC	206	0.6	133	0.6	19	0.3	42	0.6	6	1.1	2	1.1	4	5.6
HETEROSEX CONTACT	1,322	3.5	468	2.1	437	6.3	381	5.4	27	4.8	8	4.5	1	1.4
TRANSFUSION	454	1.2	209	0.9	70	1.0	130	1.8	43	7.7	1	0.6	1	1.4
PEDIATRIC	353	0.9	96	0.4	105	1.5	139	2.0	9	1.6	3	1.7	1	1.4
OTHER OR UNKNOWN	1,376	3.7	377	1.7	401	5.8	563	8.0	25	4.5	6	3.4	4	5.6
TOTAL	37,269	100.0	22,512	100.0	6,887	100.0	7,060	100.0	559	100.0	179	100.0	72	100.0

Source: Medi-Cal AIDS Special Research File.
Note : Percents are rounded independently and may not add to total.

Trends of Transmission of Aids

Table 6 clearly illustrates the trend toward injection drug use and heterosexual contact as significant modes of transmission. Over 31 percent of the cases diagnosed in 1994 were IDUs. The proportion of IDUs who are also MSM continues decreasing as the proportion of heterosexual IDUs contracting AIDS is on the rise. The percent of persons with AIDS resulting from heterosexual contact is also increasing each year, and by 1994 had climbed to 7.0 percent of all newly diagnosed cases.

Although the percent of heterosexuals with AIDS has risen steadily, as has the percent of women with AIDS, the percentage of hemophiliacs, transfusion recipients, and pediatric cases have not.

TABLE 6

TEMPORAL TRENDS IN RISK GROUP COMPOSITION OF PWAMs
NEWLY DIAGNOSED CASES BY CALENDAR YEAR

YEAR OF DIAG	TOTAL		MEN REPORTING SEX WITH MEN		HETEROSEXUAL INJECTION DRUG USER		MEN REPORTING SEX WITH MEN/ INJECTION DRUG USER		HEMOPHILIAC		HETEROSEXUAL CONTACT		TRANSFUSION		PEDIATRIC		OTHER OR UNKNOWN	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Pre 1985	455	100.0	348	76.5	11	2.4	78	17.1	3	0.7	2	0.4	6	1.3	4	0.9	3	0.7
1985	1,024	100.0	786	76.8	35	3.4	146	14.3	9	0.9	8	0.8	11	1.1	17	1.7	12	1.2
1986	1,880	100.0	1,401	74.5	88	4.7	290	15.4	14	0.7	24	1.3	30	1.6	15	0.8	18	1.0
1987	2,710	100.0	1,992	73.5	158	5.8	392	14.5	13	0.5	43	1.6	41	1.5	25	0.9	46	1.7
1988	3,328	100.0	2,393	71.9	288	8.7	417	12.5	32	1.0	73	2.2	50	1.5	33	1.0	42	1.3
1989	3,849	100.0	2,723	70.7	384	10.0	427	11.1	14	0.4	97	2.5	60	1.6	47	1.2	97	2.5
1990	4,379	100.0	2,979	68.0	522	11.9	474	10.8	22	0.5	128	2.9	62	1.4	39	0.9	153	3.5
1991	5,771	100.0	3,777	65.4	786	13.6	598	10.4	29	0.5	184	3.2	68	1.2	55	1.0	274	4.7
1992	6,356	100.0	3,867	60.8	1,067	16.8	652	10.3	40	0.6	280	4.4	58	0.9	54	0.9	338	5.3
1993	4,752	100.0	2,725	57.3	887	18.7	538	11.3	21	0.4	287	6.0	44	0.9	48	1.0	202	4.3
1994	2,745	100.0	1,455	53.0	567	20.7	290	10.6	9	0.3	193	7.0	24	0.9	16	0.6	191	7.0
Total	37,249	100.0	24,446	65.6	4,793	12.9	4,302	11.5	206	0.6	1,319	3.5	454	1.2	353	0.9	1,376	3.7

Source: Medi-Cal AIDS Special Research File.
Note : Figures are rounded independently and may not add to total.

Percent of PWA's Who Receive Medi-Cal and Percentage History

Table 7 displays the percent of PWAs who receive Medi-Cal, and how the percent has changed over time. This information is further broken out by HIV exposure group. For all risk groups combined, the percent of PWAs on Medi-Cal appears to be declining. One explanation would attribute the drop to the change in definition of AIDS beginning in 1993. Since the newer AIDS definition includes cases at a much earlier stage, the need for services would not be as great. Fewer of these persons would be disabled and in need of financial assistance. Consequently, the percent of PWAs on Medi-Cal at diagnosis would initially decline.

However, in our earliest reports in which the AIDS Registry was matched with Medi-Cal files, after initial computerized comparison, a labor-intensive manual process was utilized to screen residual cases, resulting in a more complete match. The number of cases has increased so substantially that the manual phase is impractical. The less exhaustive match may cause the percent Medi-Cal estimate to be understated.

TABLE 7

TEMPORAL TRENDS IN PERCENT OF
PWAs ON MEDI-CAL
BY RISK GROUP, BY CALENDAR YEAR OF DIAGNOSIS

YEAR OF DIAGNOSIS	TOTAL	MEN REPORTING SEX WITH MEN	HETERO-SEXUAL INJECTION DRUG USER	MEN REPORTING SEX WITH MEN / INJECTION DRUG USER	HEMOPHILIAC	HETEROSEXUAL CONTACT	TRANSFUSION	PEDIATRIC	OTHER OR UNKNOWN
Pre 1985	18.89	18.11	24.44	23.78	30.00	20.00	16.22	18.18	8.57
1985	39.78	37.84	50.00	56.59	42.86	50.00	15.71	70.83	31.58
1986	46.52	43.00	68.75	73.98	45.16	50.00	28.04	62.50	33.96
1987	48.32	44.80	67.81	73.00	39.39	47.25	28.87	71.43	50.00
1988	50.77	47.13	70.76	69.27	66.67	60.33	33.78	73.33	39.25
1989	49.54	45.57	69.57	68.76	46.67	59.88	38.22	73.44	46.64
1990	50.13	44.77	74.04	70.54	68.75	57.14	48.06	78.00	56.88
1991	51.69	45.93	73.94	66.74	53.70	60.13	45.03	70.51	69.72
1992	50.38	43.16	72.10	67.15	61.54	56.45	47.93	77.14	74.29
1993	41.88	35.37	62.20	59.58	42.86	53.35	41.12	72.73	36.59
1994	37.72	30.89	56.99	52.16	42.86	52.30	39.34	50.00	35.77
Total	46.50	41.43	67.47	63.86	52.28	55.38	36.91	69.22	50.24

Source: Medi-Cal AIDS Special Research File.

Note : Percents are rounded independently and may not add to total.

Medi-Cal Share of Treatment Costs

The 25 counties with the highest number of PWAs and the percentage covered by Medi-Cal are shown in **Table 8**. If all PWAs from the beginning of the epidemic are counted, 46.5 percent are or were on Medi-Cal. Of the selected counties, Humboldt County has the fewest identified PWAs, but 80.0 percent of these people are on Medi-Cal, the highest percentage of PWAMs in the group. Los Angeles and San Francisco Counties have the highest actual numbers of PWAs and the percentages on Medi-Cal are both lower than the Statewide average. This contrasts with Sacramento, Fresno, Monterey, San Joaquin, Stanislaus, Santa Cruz, Tulare, and Humboldt Counties where over 60 percent of PWAs are or were covered by Medi-Cal.

TABLE 8
PERCENT OF PWAs ON MEDI-CAL
BY COUNTY OF DIAGNOSIS
STATEWIDE AND SELECTED COUNTIES

COUNTY OF DIAGNOSIS	ALL PWAs	MEDI-CAL PWAs	PERCENT
TOTAL	80,148	37,269	46.50
Los Angeles	28,143	11,518	40.93
San Francisco	18,619	8,528	45.80
San Diego	6,425	3,270	50.89
Alameda	3,911	1,886	48.22
Orange	3,626	1,651	45.53
Riverside	2,332	1,311	56.22
Santa Clara	2,059	922	44.78
Sacramento	1,853	1,125	60.71
San Bernardino	1,758	994	56.54
Contra Costa	1,537	768	49.97
San Mateo	1,381	560	40.55
Sonoma	1,202	562	46.76
Marin	1,032	443	42.93
Solano	691	323	46.74
Fresno	646	415	64.24
Kern	504	299	59.33
Ventura	483	277	57.35
Monterey	471	289	61.36
Santa Barbara	456	268	58.77
San Joaquin	453	313	69.09
Stanislaus	343	220	64.14
Santa Cruz	330	202	61.21
San Luis Obispo	261	144	55.17
Tulare	151	100	66.23
Humboldt	145	116	80.00

Source: Medi-Cal/AIDS Special Research File.
Note : Percents are rounded independently and may not add to total.

IV. MEDICAL CARE EXPENDITURES FOR AIDS IN CALIFORNIA

Trends in Medi-Cal Payments

Medi-Cal payments for treatment of PWAs have risen steadily in the past decade, both in actual figures and as a percent of total Medi-Cal expenditures. Although recent data show the expenditures per person per month to have leveled off, PWAs are living longer, creating a larger beneficiary population. Therefore, Medi-Cal costs are expected to continue climbing. (**Table 9)**

TABLE 9
MEDI-CAL EXPENDITURES FOR
PERSONS WITH AIDS, BY FISCAL YEAR OF PAYMENT
FEE-FOR-SERVICE PROVIDERS ONLY

FISCAL YEAR OF PAYMENT	MEDI-CAL AIDS EXPENDITURES*	MEDI-CAL TOTAL EXPENDITURES*	AIDS AS PERCENT OF TOTAL
1986-87	$24.4	$4,467.8	0.5
1987-88	36.6	4647.6	0.8
1988-89	56.0	5089.9	1.1
1989-90	73.7	5823.5	1.3
1990-91	97.3	7267.7	1.3
1991-92	132.6	8574.0	1.5
1992-93	157.8	9069.9	1.7
1993-94	166.2	9653.4	1.7
1994-95**	164.0	9694.5	1.7

* Amounts are in millions of dollars.

** AIDS expenditures estimated at previous year's rate of increase due to incomplete data for 1994-95.

Source: Medi-Cal AIDS Special Research File;
California's Medical Assistance Program Annual Statistical Report, Table 13, Provider Payments..

Monthly Treatment Expenses for Persons with AIDS on Medi-Cal

As shown in **Table 10**, the overall expenditures per person, per month, or EPPPM, are dropping slightly, while the pharmacy component has climbed rapidly. There are undoubtedly many factors contributing to the overall decline in EPPPM. It is important to remember the definition of "AIDS" was changed in 1993 to include persons at an earlier, healthier stage of HIV disease. Another significant change has been the availability of new drugs which are improving length and quality of life. By 1993-94, pharmacy costs had risen to $390 per person, per month, which represents 24.8 percent of the total EPPPM, $1,575.

Lifetime Treatment Expenditures for Persons with AIDS on Medi-Cal

To date, 20,991 of the total 37,269 PWAMs (56 percent) have died. The average length of time from diagnosis to death for these PWAMs was 16.9 months. However, since this figure reflects only cases where death has occurred, it understates the longevity of all AIDS cases.

Longevity was also estimated using the product limit method or "survival analysis".[2] This method includes data on live cases and thereby accounts for longer-living PWAMs.

The mean survival estimate for the current data is 59.7 months, with a median of 26.1 months. Although the median may be a more intuitively appealing representation of life expectancy, because the mean is skewed by a relatively small number of long-living cases, the mean of 59.7 months is used here because the long-lived cases accumulate treatment expenses.

The mean lifetime expenditure for a PWAM is calculated to be $94,028 (59.7 x $1,575), with the annual expenditure being $18,900 (12 x $1,575). Although the annual expenditures are very similar to past data, the extended life expectancy has more than doubled the lifetime costs projected in the report done two years ago.

[2]Kaplan, E.L., and Meir, P. "Nonparametric Estimation from an Incomplete Observation", Journal of the American Statistical Association 1958:53:457-481.

TABLE 10
EXPENDITURES PER PERSON, PER MONTH
FOR PWAMs
BY FISCAL YEAR OF SERVICE

FISCAL YEAR OF SERVICE	EXPENDITURES PER PERSON, PER MONTH		PRESCRIPTIONS AS PERCENT OF TOTAL
	TOTAL	PRESCRIPTIONS	
1986-87	$1,836	$53	2.9
1987-88	1,699	161	9.5
1988-89	1,579	180	11.4
1989-90	1,657	191	11.5
1990-91	1,712	234	13.7
1991-92	1,767	312	17.7
1992-93	1,613	365	22.6
1993-94	1,575	390	24.8

Source: Medi-Cal/AIDS Special Research File.

Components of Medi-Cal Expenditures

Table 11 shows the changes in treatment expenditures over the past several years. In order to accommodate eight years of data, amounts are displayed in thousands of dollars. Our previous report noted the rise in pharmacy expense and movement from hospital-based care to a home and community based setting. This trend has continued and, with the advent of new drugs, the pharmacy component continues to grow. By 1993-94, pharmacy exceeded 30 percent of all treatment costs for PWAMs. More detailed information on prescription drugs will be presented in **Tables 12** and **13**.

Hospital inpatient expenses are still the greatest proportion, but are dropping steadily. Hospitalizations represented over 80 percent of treatment costs in 1986-87 and have dropped to only 42 percent in Fiscal Year 1993-94. Long term care, as a percent of total expenses, remains slow growing and relatively stable. Certified hospice, home health agency, medical transportation, and AIDS waiver services are rising and reflect the trend toward outpatient treatment. The AIDS waiver program, which provides supportive services to allow eligible PWAMs to remain at home, shows strong growth. Payments for AIDS waiver services exceeded $7.4 million in 1993-94, a 54 percent increase over the previous year.

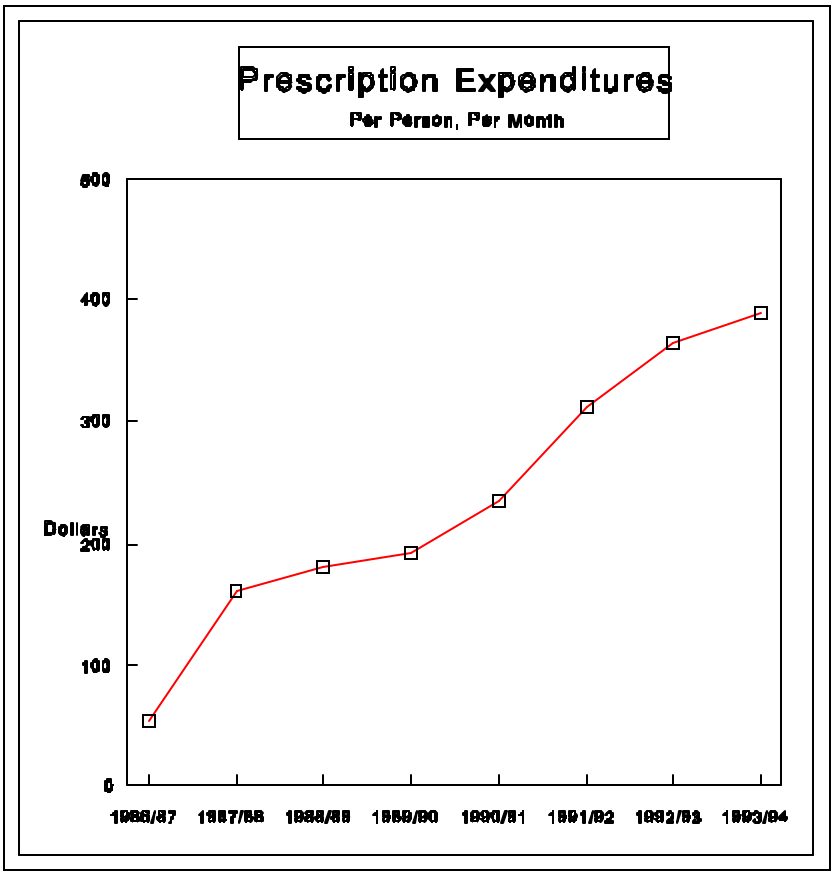
TABLE 11

MEDI-CAL AIDS EXPENDITURE ANALYSIS BY SERVICE COMPONENT
(IN THOUSANDS OF DOLLARS)

SERVICE COMPONENT	86/87		87/88		88/89		89/90		90/91		91/92		92/93		93/94	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
PHYSICIAN	1,607	5.4	2,229	4.9	2,963	5.0	3,841	4.8	4,697	4.5	5,783	4.1	5,788	3.6	5,865	3.4
PHARMACY	1,169	3.9	4,887	10.8	7,809	13.2	11,216	13.9	17,313	16.6	30,030	21.1	44,213	27.2	51,542	30.2
HOSPITAL OUTPATIENT	1,282	4.3	2,582	5.7	4,138	7.0	5,486	6.8	6,310	6.0	7,795	5.5	11,043	6.8	11,100	6.5
CLINIC	18	0.1	42	0.1	73	0.1	133	0.2	272	0.3	486	0.3	1,067	0.7	1,247	0.7
LONG TERM CARE	227	0.8	720	1.6	757	1.3	1,111	1.4	2,299	2.2	3,546	2.5	4,000	2.5	5,004	2.9
HOSPITAL INPATIENT	24,488	82.3	33,087	73.4	40,864	69.2	54,769	67.9	66,538	63.8	82,082	57.7	78,547	48.2	71,959	42.2
AIDS WAIVER	0	0.0	0	0.0	2	a/	335	0.4	1,326	1.3	3,102	2.2	4,856	3.0	7,468	4.4
HOME HEALTH AGENCY	590	2.0	808	1.8	1,256	2.1	1,571	1.9	1,507	1.4	2,022	1.4	2,367	1.5	2,729	1.6
CERTIFIED HOSPICE	0	0.0	7	a/	112	0.2	556	0.7	1,605	1.5	2,326	1.6	4,732	2.9	6,409	3.8
MEDICAL TRANSPORT	81	0.3	144	0.3	215	0.4	323	0.4	377	0.4	551	0.4	735	0.5	765	0.4
OTHER	301	1.0	562	1.2	891	1.5	1,337	1.7	2,092	2.0	4,566	3.2	5,464	3.4	6,568	3.8
TOTAL	29,763	100.0	45,069	100.0	59,082	100.0	80,679	100.0	104,335	100.0	142,289	100.0	162,812	100.0	170,655	100.0

Source: Medi-Cal AIDS Special Research File.
Note : Percents are rounded independently and may not add to total.
a/ Less than 0.05 percent.

FIGURE 2



Source: **Table 10**

Figure 2 shows the tremendous increase in expenditures per person, per month for prescription drugs. **Table 12** displays expenditures for all prescriptions for PWAMs over a six-year period, by total and

by selected drugs. Actual cost to the Medi-Cal program is later reduced by a rebate from drug companies, currently by about 15 percent.

TABLE 12

MEDI-CAL EXPENDITURES FOR SELECTED DRUGS
PRESCRIBED FOR PERSONS WITH AIDS
BY FISCAL YEAR OF SERVICE

TYPE OF DRUG	1988/89		1989/90		1990/91		1991/92		1992/93		1993/94	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
AZT RETROVIR	$3,204,764	49.48	$3,113,622	33.44	$2,909,800	20.13	$3,621,727	14.28	$4,157,939	11.07	$3,148,744	7.41
CYTOVENE	0	0.00	413,743	4.44	1,374,867	9.51	2,246,317	8.86	3,403,874	9.06	2,886,034	6.79
DDC HIVID	0	0.00	0	0.00	0	0.00	0	0.00	817,176	2.18	1,078,933	2.54
DDI, VIDEX	0	0.00	0	0.00	0	0.00	220,780	0.87	1,309,556	3.49	853,365	2.01
DIFLUCAN	0	0.00	95,523	1.03	1,510,384	10.45	3,120,232	12.30	4,306,745	11.46	4,924,970	11.59
EPOGEN, PROCRIT	0	0.00	0	0.00	365,991	2.53	2,436,191	9.60	3,073,893	8.18	2,642,032	6.22
FOSCAVIR	0	0.00	0	0.00	0	0.00	461,509	1.82	1,955,367	5.20	1,701,600	4.00
MYCOBUTIN	0	0.00	0	0.00	0	0.00	0	0.00	204,419	0.54	1,361,636	3.20
SPORANOX	0	0.00	0	0.00	0	0.00	0	0.00	86,774	0.23	292,008	0.69
ZOVIRAX	388,502	6.00	495,672	5.32	603,050	4.17	1,020,059	4.02	1,425,361	3.79	1,626,147	3.83
ALL PRESCRIPTIONS	6,476,758	100.00	9,311,198	100.00	14,458,526	100.00	25,366,625	100.00	37,569,126	100.00	42,509,259	100.00

Source: Medi-Cal AIDS Special Research File.
Note : Percents are rounded independently and may not add to total.

Selected Drugs Prescribed for Persons with Aids

Payments for AZT dropped from 1992-93 to 1993-94, both in actual dollars and as a percent of total expenditures. Diflucan, a drug classified for opportunistic infection treatment, leads the way in Medi-Cal expenditures, approaching $5 million in 1993-94. Cytovene, also in the same class of drugs, follows at $2.9 million.

A new class of drug, protease inhibitors, have very recently been approved by the Federal Government. These drugs were not available at the time this Medi-Cal AIDS Special Research file was created, but preliminary results have been exciting. **Table 13** was created from the most recent Medi-Cal drug claims. Although these claims have not been matched against the AIDS Registry, the drugs displayed are used only in treatment of AIDS.

Four of the drugs in **Table 13** are classified as Nucleoside Analogues. These are AZT, ddI, ddC, and Lamivudine (also known as 3TC). Lamivudine was first provided to Medi-Cal patients in October 1995, and the demand jumped rapidly. From January through March 1996, the first complete quarter this drug was available to PWAMs, prescriptions for Lamivudine exceeded the number of prescriptions for AZT, with over 6,700 prescriptions being filled.

Protease inhibitors (Norvir, Invirase, Crixivan) are also only very recently available, but experienced immediate use. Invirase, first provided to PWAMs in December 1995, was the first of these three drugs to become available. During the first complete quarter of Invirase use, Medi-Cal expended over $1.5 million dollars for over three thousand prescriptions. Norvir and Crixivan both were first used by PWAMs in March of 1996, and although only two months of claims data were available at the time of this report, both promise extensive utilization.

TABLE 13

MEDI-CAL EXPENDITURES FOR DRUGS
COMMONLY USED IN TREATMENT OF AIDS

DATE OF SERVICE	AZT, RETROVIR		ddI, VIDEX		ddc, HIVID		EPIVIR, LAMIVUDINE		NORVIR, RITONAVIR		INVIRASE, SAQUINAVIR		CRIXIVAN, INDINAVIR	
	Claims	Amount	Claims	Amount	Claims	Amount	Claims	Amount	Claims	Amount	Claims	Amount	Claims	Amount
1994 Q2	5,378	1,163,602	1,642	232,384	2,095	381,650	0	0	0	0	0	0	0	0
1994 Q3	5,025	1,075,596	1,435	195,426	1,992	357,060	0	0	0	0	0	0	0	0
1994 Q4	4,875	1,031,001	1,242	167,932	1,945	351,503	0	0	0	0	0	0	0	0
1995 Q1	4,960	1,067,153	1,256	155,285	1,847	349,281	0	0	0	0	0	0	0	0
1995 Q2	5,390	1,149,843	1,211	149,628	1,834	346,425	0	0	0	0	0	0	0	0
1995 Q3	5,128	1,122,722	1,181	149,160	1,723	331,655	0	0	0	0	0	0	0	0
1995 Q4	5,421	1,159,841	1,206	152,240	1,728	321,168	703	148,218	0	0	252	129,981	0	0
1996 Q1	6,515	1,427,924	1,320	154,062	1,249	237,440	6,716	1,448,093	553	200,455	3,113	1,502,805	21	6,703

Source: Medi-Cal paid claims files April 1994 through April 1996 month of payment.

Medi-Cal Expenditures Per Day (EPD) & Average Lengths of Stay (ALOS)

Table 14 lists the inpatient hospital expenditures per day and average lengths of stay for the State overall and for the 25 counties with the largest number of Medi-Cal AIDS patients. As can be seen, both the Statewide average hospital length of stay (ALOS) and the average expenditures per day (EPD) have declined. The ALOS has dropped dramatically, from 9.2 days in Fiscal Year 1989-90 to only 7.4 days in Fiscal Year 1993-94. The EPD has also dropped, but not so substantially. The two counties not contributing to this trend, Kern and Ventura, actually show an increase in ALOS. In Ventura County the ALOS was up sharply from 8.1 days to 11.9 days, but EPD dropped from $737 to only $664.

Average EPD varied extensively, from a low of $350 in San Joaquin County to $1,044 in Fresno County. ALOS also showed significant variability, ranging from the low of 4.2 days in Sonoma County to a high of 12.0 days in San Mateo County.

TABLE 14
MEDI-CAL EXPENDITURES PER DAY(EPD)
AND AVERAGE LENGTHS OF STAY(ALOS)
SELECTED COUNTIES, BY FISCAL YEAR OF SERVICE

COUNTY	1989/90		1990/91		1991/92		1992/93		1993/94	
	EPD	ALOS	EPD	ALOS	EPD	ALOS	EPD	ALOS	EPD	ALOS
STATEWIDE	723	9.2	748	9.1	786	8.6	771	8.0	715	7.4
Alameda	691	10.4	750	9.7	750	9.7	719	9.3	708	9.0
Contra Costa	653	9.5	604	7.8	729	7.3	713	8.7	707	8.7
Fresno	685	9.5	625	9.5	843	10.2	794	8.2	1,044	6.4
Kern	769	6.7	857	6.2	735	8.1	768	6.8	762	8.1
Los Angeles	819	9.2	885	9.3	900	8.8	898	8.1	824	7.4
Marin	559	6.2	570	9.7	551	5.2	623	7.2	649	5.9
Mendocino	a/	a/	908	5.9	810	6.3	1,017	5.1	472	7.7
Monterey	733	8.5	964	7.1	1,071	6.5	1,168	7.2	986	6.7
Orange	839	9.8	776	10.4	965	9.3	969	8.4	884	8.6
Riverside	867	8.8	806	10.3	889	7.5	764	6.7	871	7.9
Sacramento	682	9.0	701	8.6	700	7.7	720	7.5	730	6.0
San Bernardino	733	8.5	786	8.0	829	5.5	804	5.8	878	7.7
San Diego	695	8.7	640	8.6	667	8.4	679	7.8	683	7.8
San Francisco	567	9.1	542	8.3	595	8.2	599	7.7	518	6.6
San Joaquin	606	10.5	628	13.0	638	10.8	375	6.9	350	7.0
San Mateo	394	12.8	488	13.8	817	11.6	483	10.4	434	12.0
Santa Barbara	760	8.8	570	7.7	712	6.8	604	9.3	696	7.2
Santa Clara	954	8.1	1,035	7.4	1,140	9.0	1,048	8.6	993	7.9
Santa Cruz	539	10.3	607	9.0	537	8.7	647	7.2	794	8.9
Sonoma	933	6.7	1,062	8.4	720	8.2	788	9.0	505	4.2
Stanislaus	663	9.0	667	7.8	738	7.5	576	6.2	533	8.8
Ventura	737	8.1	701	6.9	776	10.0	703	11.5	664	11.9

Source: Medi-Cal AIDS Special Research File.
a/ Less than 25 hospital stays.

Changing Costs Relating to Progression of Disease

Table 15 was created to address the issue of changing costs relating to progression of disease. Since the only medical information on paid claims is the primary diagnosis, we cannot accurately determine disease stage from our database. In order to approximate disease staging, claims for services to PWAMs during Calendar Year 1994 were separated into two groups, those still living at the end of 1994, and persons who died during 1994. For those persons who died during 1994, all claims up to one year prior to death were selected. The average Medi-Cal paid per person per month increased dramatically during the twelve months prior to death. Table 15 displays these averages on a month-by-month basis, as well as how expenditures for treatment are divided among the primary service components during the same time period.

TABLE 15

MEAN MEDI-CAL EXPENDITURES PER PERSON, PER MONTH
& PRIMARY SERVICE COMPONENTS
BY STAGE OF DISEASE

STAGE OF DISEASE	MEAN EXPENDITURES PER PERSON, PER MONTH	PRIMARY SERVICE COMPONENTS, AS PERCENT OF TOTAL						
		HOSPITAL INPATIENT	HOSPITAL OUTPATIENT	PHARMACY	HOSPICE	LONG TERM CARE	AIDS WAIVER	PHYSICIAN
Still Living at end of 1994	$ 1,748	38.52	7.04	32.84	3.32	2.77	4.45	3.40
Expired During 1994:								
12 Months Prior to Death	1,853	45.35	7.23	27.38	2.56	2.66	3.10	4.04
11 Months Prior to Death	2,066	51.47	7.13	24.59	1.99	1.83	3.28	3.87
10 Months Prior to Death	2,085	50.19	7.25	23.65	1.93	2.50	2.83	3.80
9 Months Prior to Death	2,340	51.78	7.53	23.66	1.57	2.51	2.96	4.42
8 Months Prior to Death	2,379	48.80	7.14	25.17	2.70	2.15	3.92	4.56
7 Months Prior to Death	2,679	49.01	6.58	25.97	2.94	1.71	3.82	4.58
6 Months Prior to Death	3,102	45.06	6.54	28.23	3.14	2.92	4.05	3.52
5 Months Prior to Death	3,313	46.16	5.94	26.33	4.04	3.23	4.23	4.21
4 Months Prior to Death	3,696	47.92	5.08	24.35	5.78	3.01	4.53	3.60
3 Months Prior to Death	4,281	47.58	4.67	23.90	5.74	4.68	5.03	3.59
2 Months Prior to Death	5,510	53.09	3.43	18.10	7.78	5.51	4.87	3.01
1 Month Prior to Death	6,691	59.71	1.80	13.54	9.10	4.21	4.01	4.00

Source: Medi-Cal AIDS Special Research File.